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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/032,717	10/23/2001	Andre R. Abad	35718/237005 (5718-118)	5409

826 7590 04/17/2008

ALSTON & BIRD LLP  
BANK OF AMERICA PLAZA  
101 SOUTH TRYON STREET, SUITE 4000  
CHARLOTTE, NC 28280-4000

EXAMINER
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KUBELIK, ANNE R

ART UNIT	PAPER NUMBER
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1638

MAIL DATE	DELIVERY MODE
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04/17/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/032,717	Applicant(s) ABAD ET AL.	
	Examiner Anne R. Kubelik	Art Unit 1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-3, 9-12, 17-19, 38, 43, 46, 49, 52 and 55-64 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 9-12, 17-19, 38, 43, 46, 49, 52 and 55-64 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |  |
|---|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                      | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input checked="" type="checkbox"/> Other: <u>search results</u> .                  |

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### **DETAILED ACTION**

1. Claims 1-3, 9-12, 17-19, 38, 43, 46, 49, 52 and 55-64 are pending.
2. The rejection of claims 1-3, 9-12, 17-19, 38, 43, 46, 49, 52 and 55-64 under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for nucleic acids encoding SEQ ID NO:2 and 10, expression cassettes comprising the nucleic acids, plants and seeds comprising a construct comprising the nucleic acid, and a method of using it to impact a plant pest, does not reasonably provide enablement for any nucleic acid that has 90% identity to SEQ ID NO: 1, expression cassettes comprising the nucleic acid, plants and seeds comprising a construct comprising the nucleic acid and a method of using it to impact a plant pest is withdrawn in light of the BPAI decision of 3 April 2008.
3. The rejection of claims 1-3, 9-12, 17-19, 38, 43, 46, 49, 52 and 55-64 under 35 U.S.C. 112, first paragraph, as containing subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention is withdrawn in light of the BPAI decision of 3 April 2008.
4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a), which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3, 9-12, 17-19, 38, 43, 46, 49, 52 and 55-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Michaels et al (1996, US Patent 5,554,534).

The claims are drawn to nucleic acids with at least 90%, 93%, 94% or 95% identity to SEQ ID NO:1, wherein the nucleic acid encodes a protein with pesticidal activity for a pest of the order Coleoptera, including western corn rootworm, southern corn rootworm, Colorado potato beetle, and boll weevil. The claims are also drawn to plants, including maize and dicots, transformed with the nucleic acid and methods comprising transforming a plant with a construct comprising the nucleic acid operably linked to a plant promoter.

Michaels et al teach a nucleic acid with 85.1% identity to SEQ ID NO:1 (see search results); the nucleic acid encodes a protein with pesticidal activity toward the Coleopterans *Cyclocephala pasadenae*, *C. borealis* and *Popillia japonica*. The protein has 79.8% identity to the instant SEQ ID NO:2, the protein encoded by the instant SEQ ID NO:1 (see search results). Michaels et al also teach plants transformed with constructs comprising the nucleic acid and a method of using it to impact a plant pest (column 15, line 5, to column 16, line 35). Michaels et al do not teach nucleic acids with at least 90%, 93%, 94% or 95% identity to SEQ ID NO:1.

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to modify the nucleic acid taught by Michaels et al to produce nucleic acids with at least 90%, 93%, 94% or 95% identity to the instant SEQ ID NO:1. One of ordinary skill in the art would have been motivated to do so because Michaels et al suggest making variant toxins

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with 75% homology to their protein (column 6, lines 26-67). These toxins would include those that are encoded by nucleic acids with at least 90%, 93%, 94% or 95% identity to the instant SEQ ID NO:1, given the sequence identity between the instant SEQ ID NO:1 and the nucleic acid taught by Michaels et al and the sequence identity between the instant SEQ ID NO:2 and the protein taught by Michaels et al. Further, one of ordinary skill in the art would have been motivated to make these toxins where they are pesticidal to western corn rootworm, southern corn rootworm, Colorado potato beetle, or boll weevil, given the economic impact of these pests on major crops like potato, corn and cotton. One of ordinary skill in the art would have been motivated to transform maize, potato and/or cotton with constructs comprising the variant nucleic acids operably linked to a plant promoter, to thus produce plants that have resistance to these pests. One of ordinary skill in the art would have been motivated to produce seeds from the corn and cotton plants, as this is how these plants, and many other crops, are sold to farmers. One of ordinary skill in the art would have been motivated to optimize expression of the nucleic acids for expression in a plant to get higher expression levels of the pesticidal protein in the plants.

***Request for Information under 37 CFR § 1.105***

7. Applicant and the assignee of this application are required under 37 CFR 1.105 to provide the following information that the examiner has determined is reasonably necessary to the examination of this application.

This request is being made for the following reasons:

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Applicant is claiming a nucleic acid with 90% identity to a nucleic acid isolated from *Bacillus thuringiensis* strain 1218, but the instant specification is silent about the source of *B. thuringiensis* strain 1218. The requested information is required to make a meaningful and complete search of the prior art.

In response to this requirement, please provide answers to each of the following interrogatories eliciting factual information:

- (i) What is the source of *B. thuringiensis* strain 1218? Please supply all of the designations/denominations used for this strain.
- (ii) At or before the time of filing of the instant application or any provisional application to which benefit is claimed, had said *B. thuringiensis* strain 1218 been disclosed or made publicly available? If so, under what designation/denomination and under what conditions were said strain been disclosed or made publicly available and from when to when?

If Applicant views any or all of the above requested information as a Trade Secret, then Applicant should follow the guidance of MPEP § 724.02 when submitting the requested information.

In responding to those requirements that require copies of documents, where the document is a bound text or a single article over 50 pages, the requirement may be met by providing copies of those pages that provide the particular subject matter indicated in the requirement, or where such subject matter is not indicated, the subject matter found in applicant's disclosure. Please indicate where the relevant information can be found.

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The fee and certification requirements of 37 CFR § 1.97 are waived for those documents submitted in reply to this requirement. This waiver extends only to those documents within the scope of this requirement under 37 CFR § 1.105 that are included in the applicant's first complete communication responding to this requirement. Any supplemental replies subsequent to the first communication responding to this requirement and any information disclosures beyond the scope of this requirement under 37 CFR § 1.105 are subject to the fee and certification requirements of 37 CFR § 1.97.

The applicant is reminded that the reply to this requirement must be made with candor and good faith under 37 CFR § 1.56. Where the applicant does not have or cannot readily obtain an item of required information, a statement that the item is unknown or cannot be readily obtained may be accepted as a complete reply to the requirement for that item.

This requirement is an attachment of the enclosed Office action. A complete reply to the enclosed Office action must include a complete reply to this requirement. The time period for reply to this requirement coincides with the time period for reply to the enclosed Office action.

### *Conclusion*

8. No claim is allowed.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anne R. Kubelik, whose telephone number is (571) 272-0801. The examiner can normally be reached Monday through Friday, 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg, can be reached at (571) 272-0975.

The central fax number for official correspondence is (571) 273-8300.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are

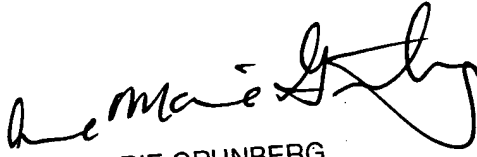
Art Unit: 1638


available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

Anne Kubelik  
April 9, 2008

/Anne R. Kubelik/  
Primary Examiner, Art Unit 1638

  
ANNE MARIE GRUNBERG  
SUPERVISORY PATENT EXAMINER

  
Director TC 1600 (Acting)



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OM protein - protein search, using sw model

Run on: January 7, 2003, 05:12:43 : Search time 26 Seconds  
(without alignments)  
1364.771 Million cell updates/sec

Title: US-10-032-717-2  
Perfect score: 6332  
Sequence: 1 MSPNNQNEYIIDAETSTSV.....MSETEGFFYESVELIVDVE 1206

Scoring table: BLOSUM62  
Gapop 10.0, Gapext 0.5

Searched: 262574 seqs, 29422922 residues

Total number of hits satisfying chosen parameters: 262574

Minimum DB seq length: 0  
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

Database : Issued Patents AA:  
1: /cgn2\_6/ptodata/1/iaa/5A\_COMB.pep.\*  
2: /cgn2\_6/ptodata/1/iaa/5B\_COMB.pep.\*  
3: /cgn2\_6/ptodata/1/iaa/6A\_COMB.pep.\*  
4: /cgn2\_6/ptodata/1/iaa/6B\_COMB.pep.\*  
5: /cgn2\_6/ptodata/1/iaa/6C\_COMB.pep.\*  
6: /cgn2\_6/ptodata/1/iaa/backfiles.pep.\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	959.5	78.3	1169	1 US-08-315-468-4	Sequence 4, Appli
2	950.5	62.4	1157	1 US-07-876-280-30	Sequence 30, Appli
3	950.5	62.4	1157	1 US-07-812-180A-2	Sequence 2, Appli
4	950.5	62.4	1157	1 US-08-315-468-2	Sequence 2, Appli
5	950.5	62.4	1157	4 US-07-941-650A-2	Sequence 2, Appli
6	3021	47.7	1149	1 US-07-915-203-2	Sequence 2, Appli
7	3021	47.7	1149	1 US-08-272-887-2	Sequence 2, Appli
8	3021	47.7	1149	2 US-08-789-449-2	Sequence 2, Appli
9	2595.5	41.0	1157	2 US-08-532-547-5	Sequence 5, Appli
10	2595.5	41.0	1157	2 US-08-379-656B-5	Sequence 5, Appli
11	2595.5	41.0	1157	3 US-08-455-838-5	Sequence 5, Appli
12	2595.5	41.0	1157	4 US-09-019-809-5	Sequence 5, Appli
13	2595.5	41.0	1157	4 US-09-471-177-5	Sequence 5, Appli
14	2590	40.9	1156	4 US-09-002-285-72	Sequence 72, Appli
15	2558.5	40.4	1169	1 US-08-542-921-2	Sequence 2, Appli
16	2558.5	40.4	1169	2 US-08-880-685-2	Sequence 2, Appli
17	2558.5	40.4	1169	2 US-08-880-684-2	Sequence 2, Appli
18	2449	38.7	1150	4 US-09-002-285-74	Sequence 74, Appli
19	2419.5	38.2	1134	4 US-09-002-285-76	Sequence 76, Appli
20	2397	37.9	1138	1 US-07-973-320-2	Sequence 2, Appli
21	2391.5	37.8	1229	1 US-08-100-709-4	Sequence 4, Appli
22	2391.5	37.8	1229	1 US-08-176-865-4	Sequence 4, Appli
23	2391.5	37.8	1229	1 US-08-474-038-4	Sequence 4, Appli
24	2391.5	37.8	1229	2 US-08-779-046-4	Sequence 4, Appli
25	2391.5	37.8	1229	2 US-08-881-340-4	Sequence 4, Appli
26	2380	37.6	1138	1 US-07-973-320-4	Sequence 4, Appli
27	2353.5	37.2	1227	1 US-08-448-170-8	Sequence 8, Appli

28 2353.5 37.2 1227 4 US-08-961-803-9 Sequence 9, Appli  
29 2335 36.9 1186 4 US-09-178-252-23 Sequence 23, Appli  
30 2333.5 36.9 1227 3 US-09-053-549-2 Sequence 2, Appli  
31 2312 36.5 1207 1 US-07-951-715A-7 Sequence 7, Appli  
32 2312 36.5 1207 2 US-08-459-448A-7 Sequence 7, Appli  
33 2312 36.5 1207 3 US-08-459-595A-7 Sequence 7, Appli  
34 2312 36.5 1207 3 US-08-459-504B-7 Sequence 7, Appli  
35 2312 36.5 1207 3 US-08-459-444-7 Sequence 8, Appli  
36 2312 36.5 1207 3 US-09-053-549-8 Sequence 7, Appli  
37 2312 36.5 1207 4 US-09-547-422-7 Sequence 2, Appli  
38 2186.5 34.5 1189 1 US-08-602-737-2 Sequence 2, Appli  
39 2186.5 34.5 1189 4 US-09-001-982-2 Patent No. 518960  
40 2185.5 34.5 1189 6 518960-6 Sequence 6, Appli  
41 2184.5 34.5 1189 2 US-08-980-071-6 Sequence 6, Appli  
42 2184.5 34.5 1189 2 US-08-757-536-6 Sequence 6, Appli  
43 2184.5 34.5 1189 3 US-09-314-093-6 Sequence 6, Appli  
44 2184.5 34.5 1189 4 US-09-450-848-6 Sequence 6, Appli  
45 2184.5 34.5 1189 4 US-09-451-885-6 Sequence 6, Appli

## ALIGNMENTS

RESULT 1  
US-08-315-468-4  
; Sequence 4, Application US/08315468  
; Patent No. 5554534  
; GENERAL INFORMATION:  
; APPLICANT: Michaela, Tracy Ellis  
; APPLICANT: Focerrada, Luis  
; APPLICANT: Narva, Kenneth E.  
; TITLE OF INVENTION: Process for Controlling Scarab Pests  
; with Bacillus thuringiensis Isolates  
; NUMBER OF SEQUENCES: 6  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: David R. Saliwanchik  
; STREET: 2421 N.W. 41st Street, Suite A-1  
; CITY: Gainesville  
; STATE: FL  
; COUNTRY: USA  
; ZIP: 32606  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: Floppy disk  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: PatentIn Release #1.0, Version #1.25  
; CURRENT APPLICATION NUMBER: US/08/315,468  
; FILING DATE:  
; CLASSIFICATION: 424  
; PRIOR APPLICATION DATA:  
; APPLICATION NUMBER: US/08/014,941  
; FILING DATE: 01 FEB 1993  
; APPLICATION NUMBER: 07/828,430  
; FILING DATE: 30-JAN-1992  
; PRIOR APPLICATION DATA:  
; APPLICATION NUMBER: 07/808,316  
; FILING DATE: 16-DEC-1991  
; ATTORNEY/AGENT INFORMATION:  
; NAME: Saliwanchik, David R.  
; REGISTRATION NUMBER: 31,794  
; REFERENCE/DOCKET NUMBER: MA73.C2  
; TELECOMMUNICATION INFORMATION:  
; TELEPHONE: 904-375-8100  
; TELEFAX: 904-372-5800  
; INFORMATION FOR SEQ ID NO: 4:  
; SEQUENCE CHARACTERISTICS:  
; LENGTH: 1169 amino acids  
; TYPE: amino acid  
; STRANDEDNESS: single  
; TOPOLOGY: linear  
; MOLECULE TYPE: protein  
; HYPOTHETICAL: YES

ANTI-SENSE: NO  
ORIGINAL SOURCE:  
ORGANISM: Bacillus thuringiensis  
STRAIN: kuramotoensis  
INDIVIDUAL ISOLATE: 50C  
IMMEDIATE SOURCE:  
LIBRARY: LambdaGEM-11 library of L. Poncerrada  
CLONE: 50C(b)  
US-08-315-468-4

Query Match 78.3%; Score 4959.5; DB 1; Length 1169;  
Best Local Similarity 79.8%; Pred. No. 0;  
Matches 967; Conservative 68; Mismatches 128; Indels 49; Gaps 8;

QY 1 MSPNNQNEVEIIDATPSTSVSDNRYPPFANEPTNALQNDYKDLKMSAGNSEYPCSP 60  
DB 1 MSPNNQNEVEIIDATPSTSVSDNRYPPFANEPTNALQNDYKDLKMSAGNSEYPCSP 60  
QY 61 EVLVGODAAKAAIDIVGKLLSGLVGVPFVPIVSLVTLQIDILMPGSKSOWEIFMEQVE 120  
DB 61 EVFLSPQDAVKAADIVGKLLTGLGVFPVGPVIVSLVTLQIDILMPGSKSOWEIFMEQVE 120  
QY 121 ELINOKIAEYARKKALSELEGLGNNYQLYLTALKEEENPNRSRALRDRNRFEILDLSLF 180  
DB 121 ELINOKIAEYARKKALSELEGLGNNYQLYLTALKEEENPNRSRALRDRNRFEILDLSLF 180  
QY 181 TQMPSFRTNVEFPLTVYMAANLMLLLKDDASIFGSEKMSSTTTNNYYDRQMKLTA 240  
DB 181 TQMPSFRTNVEFPLTVYMAANLMLLLKDDASIFGSEKMSSTTTNNYYDRQMKLTA 240  
QY 241 EYSDHCKVRYETGLAKLGTSAKQWVDYNOFREMTLAVLDVVALFPNYDRTYPMETKA 300  
DB 241 EYSDHCKVRYETGLAKLGTSAKQWVDYNOFREMTLAVLDVVALFPNYDRTYPMETKA 300  
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DB 301 QLTREYVTOPLGAVNVSSIGWYKAPSGVIESSVIRPHVFDVITGLTYTQSRSS 360  
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DB 361 DRYMYWAGHQISYHRVSRGSLNQMYGTNTQNLHSTSTFDTNYDIYKLSKAVLLDIV 420  
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DB 421 YPGYTVIFGMEVEFFVFNOLNTRKLYNPVSKDIIASTRSELSLPPETSDOPNVE 480  
QY 481 SYSHRLCHITSPATGNTTGLVPVFSWTHRSADLNTIYSDKITOIPAVKCWNLFPVPV 540  
DB 481 SYSHRLCHITFIYSSSTST-YVPVFSWTHRSADLNTIYSDKITOIIPGKSKSTIGRNTYI 539  
QY 541 VKPGHGTGDLQYNRSTGCVTLFLARYGLALEKAGYRVRRLVATDADIVLHV---N 596  
DB 540 IKCRGYTGCDLVALTRIGS-----CEPQMIIPESORFIRIRVASNETSYISLYCLNQ 593  
QY 597 DAQIQPKT-MHPGE-DLTSKTFKVAIDITLNLATDSSLAKHNLGDPNSTLSGIVYV 654  
DB 594 SGTLPFNQTSYNGNENDLTYNDFYIEYPRVSVNASSNIQ-RJSIG:QTNL---FIL 649  
QY 655 DRIEPIPVDETYEAEODLEAAKAVNALFTNTKDLRPGVDYEVNOANLVECLSDLY 714  
DB 650 DRIEPIPVDETYEAEODLEAAKAVNALFTNTKDLRPGVDYEVNOANLVECLSDLY 709  
QY 715 PNEKRLFDVAEAKRLSEARNLQDPDFOEINGENGWASTGIEVIGDALPKGRVRL 774  
DB 710 PNEKRLFDVAEAKRLSEARNLQDPDFOEINGENGWASTGIEVIGDALPKGRVRL 769  
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DB 770 PGAREIDTTPYTYLYQKVEGVLPKPYRVRGRFVGSSQGLEIFTRHQTNRIVKXVPD 829  
QY 835 DLLPDPVSPVNSDGSINRCSOKYNSRLBVENRSGEAFESIPIDTGIDYENAGIHWG 894  
DB 830 DLLPDPVSPVNSDGSINRCSOKYNSRLBVENRSGEAFESIPIDTGIDYENAGIHWG 889

QY 895 FKITDPEGYATLGNLELVEEGPLSGDALERLQREEOQWKIOMTRREEDRRYMAKQAV 954  
DB 890 FKITDPEGYATLGNLELVEEGPLSGDALERLQREEOQWKIOMTRREEDRRYMAKQAV 949  
QY 955 DELVADYQDQOLAPNDVETITDLTAAQDLTQSPYVYNEMFPEIPGMNTYKTELTDLQQA 1014  
DB 950 ORLVADYQDQOLAPNDVETITDLTAAQDLTQSPYVYNEMFPEIPGMNTYKTELTDLQQA 1009  
QY 1015 WSLYDQRNAIPNGDPRGLSNRNATPGVEVQOIINHTSVLVPINWDEQVSOQFTVQPNQRY 1074  
DB 1010 WGLYDQRNAIPNGDPRGLSNRNATPGVEVQOIINHTSVLVPINWDEQVSOQFTVQPNQRY 1069  
QY 1075 VLRVTARKEGVGVYVIRDDGNQTELTTFASDYDNGMYNTOVSNYNTNAYNTQ 1134  
DB 1070 VLRVTARKEGVGVYVIRDDGNQTELTTFASDYDNGMYNTOVSNYNTNAYNTQ 1108  
QY 1135 ASSTNGYNNMNTQASNTNGNTNSVYNQGTGYITKVTPIPYTDQMMIEMSETEGTF 1194  
DB 1109 -----MYDTQASNTNGNTNSVYNQGTGYITKVTPIPYTDQMMIEMSETEGTF 1157  
QY 1195 YIESVELIVDVE 1206  
DB 1158 YIESVELIVDVE 1169

## RESULT 2

US-07-876-280-30  
; Sequence 30, Application US/07876280  
; Patent No. 5262158  
; GENERAL INFORMATION:  
; APPLICANT: Payne, Jewel M.  
; APPLICANT: Cannon, Raymond J.C.  
; APPLICANT: Bagley, Angela L.  
; TITLE OF INVENTION: No. 5262158el Bacillus thuringiensis Isolates for  
; NUMBER OF SEQUENCES: 30  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: David R. Saliwanchik  
; STREET: 2421 N.W. 41st Street, Suite A-1  
; CITY: Gainesville  
; STATE: FL  
; COUNTRY: USA  
; ZIP: 32606  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: Floppy disk  
; OPERATING SYSTEM: IBM PC compatible  
; SOFTWARE: Patent In Release #1.0, Version #1.25  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: US/07/876,280  
; FILING DATE: 19920430  
; CLASSIFICATION: 514  
; ATTORNEY/AGENT INFORMATION:  
; NAME: Saliwanchik, David R.  
; REGISTRATION NUMBER: 31,794  
; REFERENCE/DOCKET NUMBER: M/S 104  
; TELECOMMUNICATION INFORMATION:  
; TELEPHONE: 904-375-8100  
; TELEFAX: 904-372-5800  
; INFORMATION FOR SEQ ID NO: 30:  
; SEQUENCE CHARACTERISTICS:  
; LENGTH: 1157 amino acids  
; TYPE: AMINO ACID  
; STRANDEDNESS: single  
; TOPOLOGY: linear  
; MOLECULE TYPE: protein  
; HYPOTHETICAL: YES  
; ANTI-SENSE: NO  
; ORIGINAL SOURCE:  
; ORGANISM: Bacillus thuringiensis  
; STRAIN: kuramotoensis  
; INDIVIDUAL ISOLATE: PS50C

GenCore version 5.1.3  
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OM nucleic - nucleic search, using ew model

Run on: January 7, 2003, 00:49:27 ; Search time 89 Seconds  
(without alignments)  
124777.265 Million cell updates/sec

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Gapop 10.0 , Gapext 1.0

Searched: 441362 seqn, 153338381 residues

Total number of hits satisfying chosen parameters: 882724

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

Database : Issued Patents NA:  
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3: /cgm2\_6/ptodata/1/ina/6A COMB.seq.\*  
4: /cgm2\_6/ptodata/1/ina/6B COMB.seq.\*  
5: /cgm2\_6/ptodata/1/ina/PTUS COMB.seq.\*  
6: /cgm2\_6/ptodata/1/ina/backfileseq.\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

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3	1812.2	50.0	3471	1	US-07-812-180A-1
4	1812.2	50.0	3471	1	US-08-315-468-1
5	1812.2	50.0	3471	4	US-07-941-650A-1
6	1180	32.6	3797	1	US-07-915-203-1
7	1180	32.6	3797	1	US-08-272-887-1
8	1180	32.6	3797	1	US-08-789-449-1
9	883.4	24.4	4344	2	US-08-532-547-4
10	883.4	24.4	4344	2	US-08-379-656B-4
11	883.4	24.4	4344	3	US-08-455-838-4
12	883.4	24.4	4344	3	US-09-019-809-4
13	883.4	24.4	4344	4	US-09-471-177-4
14	882.8	24.4	3471	4	US-09-002-285-73
15	848.6	23.4	3759	2	US-08-542-921-1
16	848.6	23.4	3759	2	US-08-880-685-1
17	848.6	23.4	3759	2	US-08-880-684-1
18	822.2	22.7	3453	4	US-09-002-285-75
19	734.2	20.3	3411	4	US-09-002-285-77
20	733.6	20.3	3414	1	US-07-973-320-3
21	731.4	20.2	3414	1	US-07-973-320-1
22	678	18.7	3934	1	US-08-100-709-3
23	678	18.7	3934	1	US-08-176-865-3
24	678	18.7	3934	1	US-08-474-038-3
25	678	18.7	3934	2	US-08-779-046-3
26	678	18.7	3934	2	US-08-681-140-3
27	673.6	18.6	4074	1	US-08-377-690-1

28 659.2 18.2 3684 1 US-08-448-170-7  
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33 615.4 17.0 3567 2 US-08-757-536-5  
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## ALIGNMENTS

RESULT 1  
US-08-315-468-3  
; Sequence 3, Application US/08315468  
; Patent No. 5554534  
; GENERAL INFORMATION:  
; APPLICANT: Michaels, Tracy Ellie  
; APPLICANT: Foncerrada, Luis  
; APPLICANT: Narva, Kenneth E.  
; TITLE OF INVENTION: Process for Controlling Scarab Pests  
; TITLE OF INVENTION: with Bacillus thuringiensis Isolates  
; NUMBER OF SEQUENCES: 6  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: David R. Saliwanchik  
; STREET: 2421 N.W. 41st Street, Suite A-1  
; CITY: Gainesville  
; STATE: FL  
; COUNTRY: USA  
; ZIP: 32606

COMPUTER READABLE FORM:  
MEDIUM TYPE: Floppy disk  
COMPUTER: IBM PC compatible  
OPERATING SYSTEM: PC-DOS/MS-DOS  
SOFTWARE: Patent In Release #1.0, Version #1.25  
CURRENT APPLICATION NUMBER: US/08/315,468  
FILING DATE:  
CLASSIFICATION: 424  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: US/08/014,941  
FILING DATE: 01 FEB 1993  
APPLICATION NUMBER: 07/828,430  
FILING DATE: 30-JAN-1992  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: 07/808,316  
FILING DATE: 16-DEC-1991  
ATTORNEY/AGENT INFORMATION:  
NAME: Saliwanchik, David R.  
REGISTRATION NUMBER: 31,794  
REFERENCE/DOCKET NUMBER: MA73.C2  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: 904-375-8100  
TELEFAX: 904-372-5800  
INFORMATION FOR SEQ ID NO: 3:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 3507 base pairs  
TYPE: nucleic acid  
STRANDEDNESS: double  
TOPOLOGY: linear  
MOLECULE TYPE: DNA (genomic)  
HYPOTHETICAL: NO

Sequence 7, Appli  
Sequence 5, Appli  
Patent No. 5188960  
Sequence 5, Appli  
Sequence 58, Appli  
Sequence 5, Appli  
Sequence 58, Appli  
Sequence 5, Appli  
Sequence 58, Appli  
Sequence 5, Appli  
Sequence 58, Appli  
Sequence 1, Appli  
Sequence 9, Appli  
Sequence 11, Appli

ANTI-SENSE: NO  
 ORIGINAL SOURCE: Best Local Similarity 70.8%; Score 2565.2; DB 1; Length 3507;  
 STRAIN: kumamotoensis; Predicted No. 0;  
 INDIVIDUAL ISOLATE: 50C; Matches 2906; Conservative 0; Mismatches 493; Indels 15; Gaps 3;  
 IMMEDIATE SOURCE: LambdagEM-11 (cm) library of L. Ponceirada  
 CLONE: 50C (b)  
 US-08-315-468-3

Query Match 70.8%; Score 2565.2; DB 1; Length 3507;  
 Best Local Similarity 85.1%; Predicted No. 0;  
 Matches 2906; Conservative 0; Mismatches 493; Indels 15; Gaps 3;

Qy	1	ATGAGTCCAAATATCAAAATGAATATGAATATATAGATGCGACACCTTCTACTCTCTGTA	60
Db	1	ATGAGTCCAAATATCAAAATGAATATGAATATATAGATGCGACACCTTCTACTCTGTA	60
Qy	61	TCCAAATGATTTCTAACAGATACCTTTTGGCAATGAGCCCAACAAATGCGCTACAAAATATG	120
Db	61	TCCAAATGATTTCTAACAGATACCTTTTGGCAATGAGCCCAACAAATGCGCTACAAAATATG	120
Qy	121	GATTTAAAGATATTTAAATATCTCTCGGAAATGCTAGTAATACCTGTTCACTT	180
Db	121	GATTTAAAGATATTTAAATATCTCTCGGAAATGCTAGTAATACCTGTTCACTT	180
Qy	181	GAAGTACTTTAGCGGCAAGATGCGAGCTAAGCGCGCAATTCATATAGTAGTAAATTA	240
Db	181	GAGGTATTTCTAAGCGGCAAGATGCGAGCTAAGCGCGCAATTCATATAGTAGTAAATTA	240
Qy	241	CTATCAGGTTTAGGGTCCATTTTGGGCGCATAGTACGCTTTTACTCACTTAT	300
Db	241	CTAACAGGTTTAGGGTCCATTTTGGGCGCATAGTACGCTTTTACTCACTTAT	300
Qy	301	GATATTTCTGCGCTTCAGGGGAAAGAGTCAATGGGAAATTTTATGGAACTAGTAA	360
Db	301	GATATTTCTGCGCTTCAGGGGAAAGAGTCAATGGGAAATTTTATGGAACTAGTAA	360
Qy	361	GAATCTTAATCAAAAATAGCAGATATGCAAGGAAATTAAGGCGCTTTCGGAAATAGAA	420
Db	361	GAATCTTAATCAAAAATAGCAGATATGCAAGGAAATTAAGGCGCTTTCGGAAATAGAA	420
Qy	421	GGATAGTAAATATACCAATATATCTAATCGGCTTGAAGATGGAAGAAATCCA	480
Db	421	GGGCTAGGAAATATATACCAATATATCTAATCGGCTTGAAGATGGAAGAAATCCA	480
Qy	481	AATGGTTCAAGAGCTTACGAGATGTCGAAATCGAATTTTGAATCTCTGGATAGTTT	540
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Db	541	ACCAATATATGCTCTTTTAGAGTGCACAAATTTTGAAGTACCAATCTCTTACTGTAT	600
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Db	601	ACAATGGAGCGCACTTCAATTTACTGTTATTAAGGAGCGCTCAATTTTGGAGAGAA	660
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Db	661	TGGGAGTGGTCAACCACTACTATTAATAACTTATTTATGATCGTCAATGAAATCTACTGCA	720
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Qy	781	AGCGTAAACAAATGGGTTGACTATTAACAAATTCGTAGAGAAATGACATGCGCGTTT	840
Db	781	AGCGTAAACAAATGGGTTGACTATTAACAAATTCGTAGAGAAATGACATGCGCGTTT	840
Qy	841	GATGTTGCTGCAATTTCCCAATTTATGACACAGCAGCTACCCAAATCGAAACGAGCA	900
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Qy	901	CACTAACAGGGAAGTATATACAGATCCACTGGCGGTAAGCGTCTCTTCAATGGT	960
Db	901	CAGCTTACAAGGGAAGTATATACAGATCCACTGGCGGTAAGCGTCTCTTCAATGGT	960
Qy	961	TCCTGGTATGACAAAGCACTTCTTTTCGGAGTGTAGAAATCATCCGTTATTCGACACCC	1020
Db	961	TCCTGGTATGACAAAGCACTTCTTTTCGGAGTGTAGAAATCATCCGTTATTCGACACCC	1020
Qy	1021	CATGATTTGATTTATATAACGGGACTCACAGTGTATACAAATCAAGAGCAATTTCTCC	1080
Db	1021	CATGATTTGATTTATATAACGGGACTCACAGTGTATACAAATCAAGAGCAATTTCTCC	1080
Qy	1081	GCTCGCTATATAGAACATTTGGGCTGCTCATCAATTAAGCTACATCGTGTACGAGGGT	1140
Db	1081	GATCGTTATATGAGATATTTGGGCTGGTCAATTAAGCTATTAAGCATATCGGTACGAGT	1140
Qy	1141	AGTAATCTTCAACAAATGTATGGAATTAATCAAAATCTACAGACACTAGTACCTTTGAT	1200
Db	1141	AGTACCTTTACACAGATGTATGGAATTAATCAAAATTTTACAAGTACTAGCAATTTGAT	1200
Qy	1201	TTTACGAATTTATGATATTTACAGACTCTATCAAGGATGSCAGTACTCTTTGATATGTT	1260
Db	1201	TTTACGAATTTATGATATTTACAGACTCTATCAAGGATGSCAGTACTCTTTGATATGTT	1260
Qy	1261	TACCTGGTTATACGTATATTTTGGAAATGCGAGAACTCGAGTTTTCATGGTAAAC	1320
Db	1261	TACCTGGTTATACGTATATTTTGGAAATGCGAGAACTCGAGTTTTCATGGTAAAC	1320
Qy	1321	CAATTTGAATTAATACCAAGAAAGCGTTAAAGTATAATCCAGTTTCCAAAGATATATAGG	1380
Db	1321	CAATTTGAATTAATACCAAGAAAGCGTTAAAGTATAATCCAGTTTCCAAAGATATATAGG	1380
Qy	1381	AGTACAAGAGATTTCCGAATTAAGATTAACCTCCAGAACTTCAGATCAACCAAAATTTAG	1440
Db	1381	CGGACAAGAGATTTCCGAATTAAGATTAACCTCCAGAACTTCAGATCAACCAAAATTTAG	1440
Qy	1441	TCATATAGCCATAGATTTATGTATATCAAGATTTCCCGCGAGCGGTAACCACTACCGGA	1500
Db	1441	TCATATAGCCATAGATTTATGTATATCAAGATTTCCCGCGAGCGGTAACCACTACCGGA	1497
Qy	1501	TTAGTACCTGTTATTTCTGACACATCGAAGTGCAGATTTAAACAATACAAATATTTCA	1560
Db	1498	TATGTACCTGTTATTTCTGACACATCGAAGTGCAGATTTAAACAATACAAATATTTCA	1557
Qy	1561	GATAAATCACTCAAAATTTCCGCGCTTAAATTTGGGATTAATTTACCGTTTGTCCAGTG	1620
Db	1558	GGCAAAATCACCAAAATACCGGGGCGAGTCTAGCACTAGGCGAGAAATCTTATATA	1617
Qy	1621	GTAAGGACCAAGACATACAGAGGGGATTTTATACAGTATAATAGAGTACTGGTTCT	1680
Db	1618	ATAAAGGGGGTGTATACAGGGGGAGACTTATAGTGGCTTTAAGCGCGCATCGGAAT	1677
Qy	1681	GTAGGAACCTTATTTCTAGCTCGATATGGCTAGCAATTAAGAAAGAGGGAATATCGT	1740
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Qy	1741	GTAAGACTGAGATATGCTACTGATGACAGATATTTGATTTGATGATTAACGATCTCAGAT	1800
Db	1738	TCTAATGMAACTAGTTATATTTATAGTTTATAGCACTAAACCAAGCGGAATTTTAAATTC	1797
Qy	1801	CAGATGCCAAACCAATCAACCGAGTGCAGATCTCAACATCTTAAACCTTTTAAAGTTGCA	1860
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Db	1858	GAATATC---CAAGAGTCAATTTTCAAGTAAATGCTTTTCAACATACAGAGGTTATCTATA	1914
Qy	1921	GGTGAGAGCCCTTAATTTCAACATTTATCTGGTATAGTTTACGTTGACCGCAATTCATC	1980
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[illegible]

4

US-07-876-280-29  
Sequence 29, Application US/07876280  
Patent No. 5262158  
GENERAL INFORMATION:  
APPLICANT: Payne, Jewel M.  
APPLICANT: Cannon, Raymond J.C.  
APPLICANT: Bagley, Angela L.  
TITLE OF INVENTION: No. 5262158el Bacillus thuringiensis Isolates for  
TITLE OF INVENTION: Controlling Acarides  
NUMBER OF SEQUENCES: 30  
CORRESPONDENCE ADDRESS:  
ADDRESSEE: David R. Saliwanchik  
STREET: 2421 N.W. 41st Street, Suite A-1  
CITY: Gainesville  
STATE: FL  
COUNTRY: USA  
ZIP: 32606  
COMPUTER READABLE FORM:  
MEDIUM TYPE: Floppy disk  
COMPUTER: IBM PC compatible  
OPERATING SYSTEM: PC-DOS/MS-DOS  
SOFTWARE: PatentIn Release #1.0, Version #1.25  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/07/876,280  
FILING DATE: 19920430  
CLASSIFICATION: 514  
ATTORNEY/AGENT INFORMATION:  
NAME: Saliwanchik, David R.  
REGISTRATION NUMBER: 31,794  
REFERENCE/DOCKET NUMBER: M/S 104  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: 904-375-8100  
TELEFAX: 904-372-5800  
INFORMATION FOR SEQ ID NO: 29:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 3471 base pairs  
TYPE: NUCLEIC ACID  
STRANDEDNESS: double  
TOPOLOGY: linear  
MOLECULE TYPE: DNA (genomic)  
HYPOTHETICAL: NO  
ANTI-SENSE: NO  
ORIGINAL SOURCE:  
ORGANISM: Bacillus thuringiensis  
STRAIN: kumamotoensis  
INDIVIDUAL ISOLATE: PS50C  
IMMEDIATE SOURCE:  
CLONE: E. coli NM522(CMYC2320) NRRL B-16769